Mechanical Design Desktop for Machine Elements

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(ABSTRACT)

The design of machine elements such as belts, chain and sprocket, gears, cams, bearings, etc., is a complex procedure. The analytical procedure to design such elements is non-linear, often based upon statistical information and frequently heuristic in nature. The procedure is iterative and involves choosing various weighing factors based upon the application and usage. The procedure is greatly influenced by a designer's intuitive skill and experience. Due to the increased popularity of the Internet as a source of information, a number of machine element manufacturers have published design procedures for the design of machine elements. Here, an attempt has been made to arrange all the formulae, tables, charts, standards, and web resources, which are inherent to the design process, to best aid the designer.

A number of computer applications for machine design have been developed in the recent past but are limited in scope and utility as they tend to allow the designer to change only certain parameters while assigning fixed values to most parameters. This stifles the designer's creativity and diverts focus on the computer program rather than the physical problem. An attempt has been made here to allow the designer flexibility in design and increased productivity, by keeping a record of the various steps undertaken by the designer, in a particular design process.

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